

REMARKS

In the specification, the title has been amended to more clearly identify the invention.

Claims 1-11 remain in this application. Claim 1 has been amended.

Claims 8 and 9 are have been amended to be independent claims and incorporate the limitations of the base claims and to correct minor grammatical matters. As such, Claims 8 and 9 should be allowable.

No new matter has been added.

ARGUMENTS

WO 91/09193 to Moriarty discloses a self-propelled floating debris collector for swimming pool. The collector comprises a central floating body (7) placed in the centre of a circular frame (22) to which is connected by support arms (15). The central floating body (7) encloses a pipe T-joint (8) connected to a water supply hose (14) through a T-piece (11). In particular, the T-piece (11) is connected to the water supply hose (14) and to the pipe T-joint (8) through swiveling hose connectors (10) and (13). Two water propelling jet nozzles (21) producing a pure rotation of the collector are arranged on arms (15). A further water propelling jet nozzle (12) projects by the T-piece (11). In particular, the jet nozzle (12) is free to rotate about the body axis for the presence of the swivels (10) and (13) thus the direction of the collector movement is random.

Moriarty's cleaning device is provided with jet nozzles (21) and (12), which exert continuous thrusts to both nozzles simultaneously and jet nozzles (21) and (12) exert their thrust tangentially on the floating device in a fixed direction while jet nozzle (12) exerts its thrust in a direction that can change.

The rotation of jet nozzle (12) and thus the change in the direction of its thrust can be caused by unforeseeable accidental events, for example a sudden wave or a change in wind direction. In this way, it is not sure that the accidental event causes the jet nozzle (12) to rotate in the sense corresponding to a thrust direction that allows to pass an obstacle. Therefore, the device does not effectively get around obstacles in or by the water without intervention of a human operator.

In contrast the present invention addresses this problem by providing a cleaning device for a water surface adapted to avoid the stop of the device for the presence of obstacles, for example a corner of a swimming pool. The present invention requires only two jet nozzles (20, 30) that exert alternatively a rotational thrust on the floating body. The alternation of the thrusts is obtained by a distribution element that distributes alternately the energy to each jet nozzles. In this way, intermittent thrusts are generated and the rotation of the floating body about a centre of rotation is caused individually by each jet nozzle. The nozzles (21) of Moriarty are fed energy equally and simultaneously by the hose (14). Moriarty does not anticipate, teach, disclose or suggest a distribution element for providing alternate bursts of energy to different thrust nozzles.

Another advantage is the simpler construction and an energy saving by using only two nozzles of which only one is operating at a time, which may allow for more translational movement of the device. In this way, after a certain number of motions the floating body arranges itself in a position that allows to overcome the obstacle (e.g., a stair rail) and to restart the movement on the water surface to clean.

Drew regulates water flow by a rotary plate valve (37) (Figs. 4-5) which is powered by the water flow in response to water flowing through a conduit (39). Tuomey is a manual device (i.e., requiring a human operator to guide around the water surface) without any automatic water surface movement mechanism and uses two separate spring-loaded shut-off valves (81). A novel feature of the present invention is the use of the distribution element as described and claimed to control the flow of energy alternately between the two nozzles. This aspect of the present invention is not shown either separately or in combination by Moriarty, Drew or Tuomey.

A problem in the art and in the market in the instant area of technology was a need for a skimmer device which was self-powered both in rotational motion so as to skim debris within the sweep of its arms as well as in translational motion so as to cover substantial areas of the water body surface. Additionally, it was a problem in the art to construct a device that would be able to redirect itself around obstacles without human or other intervention.

Tuomey (see Column 2, lines 31-33) does not address this problem as it does not provide any element to provide translational movement. Obstacles must be negotiated by a human operator positioned nearby. Drew does not provide a means for overcoming obstacles encountered during translational movement. Moriarty similarly does not appreciably solve the problem of overcoming obstacles. In actuality, the cited art teaches away from the present invention in that the rotational movement is provided in the cited art by water pressure from an external hose. In the present invention energy is provided by electricity, e.g., a battery. Water

power can be variable depending on the water pressure emanating from the hose and the water source, and, such pressure may drop precipitously if the hose becomes kinked or blocked. The present invention provides a more constant source of energy to the nozzles, thereby providing a more constant (alternating) thrust force and maintaining a more consistent skimming motion over the water surface.

Under the recent Supreme Court case of KSR International Co. v Teleflex Inc. (07 C.D.O.S. 4654, April 30, 2007) the Examiner has not provided any evidence of the recognition or appreciation of the problem of self-powered (i.e., without human operator intervention) negotiation of obstacles. The cited art does not provide any such evidence, either. There is no obvious solution encompassed by the patent's claims, therefore, a case of obviousness has not been made out. Additionally, the claims as amended further address the Examiner's rejections as stated above.

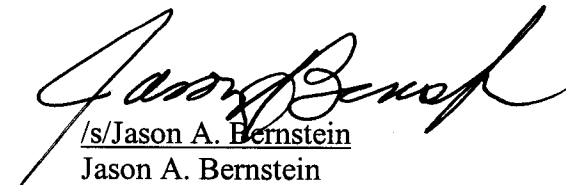
Claim 11 as amended is not rendered obvious by the cited combination of references for reasons similar to those provided above.

CONCLUSION

Applicant submits that the patent application is in condition for allowance and respectfully requests such action. If the Examiner has any questions that can be answered by telephone, please contact the patent attorney of record at the telephone number listed below.

Respectfully submitted,

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